PROCEEDINGS OF TDWG

Biodiversity Information Science and Standards 1: e20216
doi: 10.3897/tdwgproceedings.1.20216

OPEN ACCESS

Conference Abstract

DINA: Open Source and Open Services - A Modern Approach for Sustainable Natural History Collection Management Systems

James A Macklin[‡], Falko Glöckler[§], Jana Hoffmann[§], Fredrik Ronquist[|], Stefan Daume[|], Elspeth Margaret Haston[¶]

‡ Agriculture and Agri-Food Canada, Ottawa, Canada
§ Museum für Naturkunde Berlin, Berlin, Germany
| Swedish Museum of Natural History, Stockholm, Sweden
¶ Royal Botanic Garden Edinburgh, Edinburgh, United Kingdom

Corresponding author: Falko Glöckler (falko.gloeckler@mfn-berlin.de)

Received: 11 Aug 2017 | Published: 11 Aug 2017

Citation: Macklin J, Glöckler F, Hoffmann J, Ronquist F, Daume S, Haston E (2017) DINA: Open Source and Open Services - A Modern Approach for Sustainable Natural History Collection Management Systems. Proceedings of TDWG 1: e20216. https://doi.org/10.3897/tdwgproceedings.1.20216

Abstract

In the natural history community a high diversity of collection management systems exist. This enables institutions to choose from a large variety of systems, but this choice requires extensive effort to evaluate and commit to an appropriate system to cover all long-term requirements. As the different kinds of natural history data generated by a given domain and associated research-related data can typically not be handled within a single system, most institutions have several specialized software components and consequently have to cope with serious limitations in interacting and querying across the systems. This reality is costly and not sustainable. Further, even if a monolithic system would cover all needs, being dependent on only one software and vendor holds a relatively high risk in assuring long-term maintenance.

The DINA consortium ("**DI**gital Information system for **NA**tural history data", https://dina-project.net) is attempting to address these challenges by using a distributed open-source development model across multiple institutions. The goal is to produce an open-source web-based information management system for natural history data developed and

© Macklin J et al. This is an open access article distributed under the terms of the Creative Commons Attribution License (CC BY 4.0), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

maintained in a community-driven approach by several large institutions with dedicated resources. DINA was founded in 2014 by six natural history collection institutions in Europe and North America and is open to new members.

The DINA system is designed as a mesh of several web-based modules. The conceptual basis for this ecosystem is a compilation of comprehensive guidelines for application programming interfaces (APIs) to guarantee the interoperability of its components. Thus, all DINA components can be modified or even replaced by other components without crashing the rest of system as long as they are DINA compliant. Furthermore, the modularity enables the institutions to host only the components they need. DINA focuses on an open-source software philosophy and on community-driven open development, so the contributors share their development resources and expertise outside of their own institutions. Consequently, this approach reduces both, individual costs and risks, and increases the sustainability of the system.

We will present an overview of DINA focusing on the open-source software philosophy, our current achievements, challenges and future developments.

Keywords

Natural History Collection Management System, Information System, Natural History Data, DINA Consortium, Open-Source

Presenting author

James Macklin, Falko Glöckler, Jana Hoffmann, Fredrik Ronquist, Stefan Daume, Elspeth Haston